

CLAIMS

- 1 1. A magnetic head, comprising:
2 a first magnetic pole;
3 a second magnetic pole;
4 a write gap layer being disposed between said first and second magnetic poles,
5 where said write gap layer includes at least two sublayers, including an adhesion sublayer
6 and an electrically conductive, non-magnetic sublayer.
- 1 2. A magnetic head as described in claim 1 wherein said adhesion layer is disposed
2 upon said first magnetic pole, and said second magnetic pole is electroplated upon said
3 electrically conductive, non-magnetic sublayer.
- 1 3. A magnetic head as described in claim 2 wherein said electrically conductive,
2 non-magnetic sublayer serves as an electrical current conductor in a process for the
3 electroplating of said second magnetic pole.
- 1 4. A magnetic head as described in claim 1, wherein said adhesion sublayer is
2 comprised of a material selected from the group consisting of Ta, Ti, Cr and NiCr.
- 1 5. A magnetic head as described in claim 1 wherein said electrically conductive,
2 non-magnetic sublayer is comprised of a material selected from the group consisting of
3 Rh, Ru, Ir, Mo, W, Au, Be, Pd, Pt, Cu, PtMn, and Ta.

1 6. A magnetic head as described in claim 1 wherein said adhesion sublayer is
2 formed with a thickness of from approximately 25 Å to approximately 200 Å.

1 7. A magnetic head as described in claim 6 wherein said adhesion sublayer is
2 formed with a thickness of approximately 50 Å.

1 8. A magnetic head as described in claim 1 wherein said electrically conductive,
2 non-magnetic sublayer is formed with a thickness of from approximately 100 Å to
3 approximately 1000 Å.

1 9. A magnetic head as described in claim 6 wherein said electrically conductive,
2 non-magnetic sublayer is formed with a thickness of approximately 500 Å.

1 10. A magnetic head as described in claim 1 wherein said second magnetic pole is
2 comprised of a CoFe alloy.

1

2 11 A magnetic head as described in claim 1 wherein said write gap layer also
3 includes a third sublayer that is disposed between said adhesion sublayer and said
4 electrically conductive, non-magnetic sublayer, and wherein said third sublayer is
5 comprised of a material that is etchable in a reactive ion etch process.

1 12. A magnetic head as described in claim 11 wherein said third sublayer is formed
2 with a thickness of from approximately 100 Å to approximately 1,000 Å.

1 13. A magnetic head as described in claim 12 wherein said third sublayer is formed
2 with a thickness of approximately 600 Å.

3 14. A magnetic head as described in claim 11 wherein said third sublayer is
4 comprised of a material selected from the group consisting of Ta, Ti, W, Mo and Si.

1 15. A magnetic head as described in claim 1 wherein said adhesion layer is disposed
2 upon said first magnetic pole, and said second magnetic pole is electroplated upon said
3 electrically conductive, non-magnetic sublayer, where said electrically conductive, non-
4 magnetic sublayer serves as an electrical current conductor in a process for the
5 electroplating of said second magnetic pole;

6 wherein said adhesion sublayer is comprised of a material selected from the group
7 consisting of Ta, Ti, Cr and NiCr, and is formed with a thickness of from approximately
8 25 Å to approximately 200 Å;

9 wherein said electrically conductive, non-magnetic sublayer is comprised of a
10 material selected from the group consisting of Rh, Ru, Ir, Mo, W, Au, Be, Pd, Pt, Cu,
11 PtMn, and Ta and is formed with a thickness of from approximately 100 Å to
12 approximately 1000 Å;

13 wherein said write gap layer also includes a third sublayer that is disposed
14 between said adhesion sublayer and said electrically conductive, non-magnetic sublayer,

15 and wherein said third sublayer is comprised of a material that is etchable in a reactive
16 ion etch process, and
17 wherein said third sublayer is comprised of a material selected from the group
18 consisting of Ta, Ti, W, Mo and Si, and is formed with a thickness of from approximately
19 100 Å to approximately 1,000 Å.

1 16. A hard disk drive, comprising:
2 at least one hard disk being adapted for rotary motion upon a disk drive;
3 at least one slider device having a slider body portion being adapted to fly over
4 said hard disk;
5 a magnetic head being formed on said slider body for writing data to said hard
6 disk, said magnetic head including:
7 a first magnetic pole;
8 a second magnetic pole;
9 a write gap layer being disposed between said first and second magnetic poles,
10 where said write gap layer includes at least two sublayers, including an adhesion sublayer
11 and an electrically conductive, non-magnetic sublayer.

1 17. A hard disk drive as described in claim 16 wherein said adhesion layer is disposed
2 upon said first magnetic pole, and said second magnetic pole is electroplated upon said
3 electrically conductive, non-magnetic sublayer.

1 18. A hard disk drive as described in claim 16 wherein said adhesion sublayer is
2 comprised of a material selected from the group consisting of Ta, Ti, Cr and NiCr.

1 19. A hard disk drive as described in claim 16 wherein said adhesion sublayer is
2 formed with a thickness of from approximately 25 Å to approximately 200 Å.

1 20. A hard disk drive as described in claim 16 wherein said electrically conductive,
2 non-magnetic sublayer is comprised of a material selected from the group consisting of
3 Rh, Ru, Ir, Mo, W, Au, Be, Pd, Pt, Cu, PtMn, and Ta.

1 21. A hard disk drive as described in claim 16 wherein said electrically conductive,
2 non-magnetic sublayer is formed with a thickness of from approximately 100 Å to
3 approximately 1000 Å.

1 22. A hard disk drive as described in claim 16 wherein said second magnetic pole is
2 comprised of a CoFe alloy.

3 23. A hard disk drive as described in claim 16 wherein said write gap layer also
4 includes a third sublayer that is disposed between said adhesion sublayer and said
5 electrically conductive, non-magnetic sublayer, and wherein said third sublayer is
6 comprised of a material that is etchable in a reactive ion etch process.

1 24. A hard disk drive as described in claim 23 wherein said third sublayer is formed
2 with a thickness of from approximately 100 to approximately 1,000 Å.

1 25. A hard disk drive as described in claim 23 wherein said third sublayer is
2 comprised of a material selected from the group consisting of Ta, Ti, W, Mo and Si.

1 26. A method for fabricating a magnetic head, comprising:
2 fabricating a first magnetic pole upon a substrate surface;
3 fabricating a write gap layer upon said first magnetic pole, including the
4 fabrication of an adhesion sublayer upon said first magnetic pole and the fabrication of an
5 electrically conductive, non-magnetic sublayer above said adhesion sublayer;
6 electroplating a second magnetic pole upon said electrically conductive, non-
7 magnetic sublayer, including the step of passing electrical current through said
8 electrically conductive, non-magnetic sublayer to plate up said second magnetic pole.

1 27. A method for fabricating a magnetic head as described in claim 26, wherein said
2 adhesion sublayer is comprised of a material selected from the group consisting of Ta, Ti,
3 Cr and NiCr, and is formed with a thickness of from approximately 25 Å to
4 approximately 200 Å.

1 28. A method for fabricating a magnetic head as described in claim 26 wherein said
2 electrically conductive, non-magnetic sublayer is comprised of a material selected from

3 the group consisting of Rh, Ru, Ir, Mo, W, Au, Be, Pd, Pt, Cu, PtMn, and Ta and is
4 formed with a thickness of from approximately 100 Å to approximately 1000 Å.

5 29. A method for fabricating a magnetic head as described in claim 26 including
6 fabricating a third sublayer between said adhesion sublayer and said electrically
7 conductive, non-magnetic sublayer, and wherein said third sublayer is comprised of a
8 material that is etchable in a reactive ion etch process.

1 30. A magnetic head as described in claim 29 wherein said third sublayer is
2 comprised of a material selected from the group consisting of Ta, Ti, W, Mo and Si, is
3 formed with a thickness of from approximately 100 Å to approximately 1,000 Å.